

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for determining the return path of a packet in a network, the network comprising a plurality of nodes and a plurality of links between the nodes, ~~and wherein for each first node having at least one link with a second node, a link exists between the second node and the first node,~~ the method comprising the stepsacts of:

    sending ~~the a~~ packet from a source node to a destination node, via ~~at least an~~ intermediate node;

when the packet visits the intermediate node, storing information in the intermediate node for deriving the a return path for the packet to the source node, wherein no information for deriving the return path is stored in the packet when the packet visits the intermediate node; and

    when the packet is being returned to the source node, using the stored information for deriving the return path,

wherein, the information stored in the intermediate node comprises an identifier of the packet and information that encodes an output port of the intermediate node to be used for returning the packet.

2. (Currently Amended) The method for determining the return path of a packet in a network as claimed in claim 1, ~~characterized in that the step~~further comprising an act of storing information stores the information for deriving the return path in each node visited by the packet for deriving the return path, when sending the packet from a the source node to a the destination node.

3. (Cancelled)

4. (Currently Amended) An integrated circuit, comprising a network, the network having a plurality of nodes and a plurality of links between the nodes, ~~and wherein for each first node having at least one link with a second node, a link exists between the second node and the first node,~~ the network being arranged to determine

~~the a~~ return path of a packet when sending the packet from a source node to a destination node, via ~~at least~~ an intermediate node, ~~characterized in that,~~ wherein when the intermediate node is visited by the packet, the intermediate node is arranged to ~~store~~stores information for deriving the return path for the packet to the source node, and wherein no information for deriving the return path is stored in the packet when the packet visits the intermediate node,

wherein the information comprises an identifier of the packet and information that encodes an output port of the intermediate node to be used for returning the packet.

5. (Currently Amended) The integrated circuit as claimed in claim 4, ~~characterized in that wherein~~ each node of the plurality of nodes ~~is arranged to store the~~ visited by the packet stores information for deriving the return path.

6. (Cancelled)

7. (New) The method as claimed in claim 1, wherein the network is a packet-switched network.

8. (New) The method as claimed in claim 7, wherein the packet is sent from the source node to the destination node using destination routing.

9. (New) The integrated circuit as claimed in claim 4, wherein the network is a packet-switched network.

10. (New) The integrated circuit as claimed in claim 9, wherein the packet is sent from the source node to the destination node using destination routing.

11. (New) A method for determining a return path of a packet in a network, the method comprising acts of:

sending a packet from a source node to a destination node along a network path;

when the packet visits an intermediate node in the network path, storing information in the intermediate node for deriving a

return path for the packet from the intermediate node to the source node, wherein no information for deriving the return path is stored in the packet when the packet visits the intermediate node; and

using the stored information in the intermediate node for deriving the return path for the packet from the intermediate node to the source node.

12. (New) The method as claimed in claim 11, wherein the information stored in the intermediate node comprises an identifier of the packet and information that encodes an output port of the intermediate node to be used for returning the packet.

13. (New) The method as claimed in claim 11, wherein the information stored in the intermediate node comprises an identifier of the packet and information that encodes an input port of the intermediate node.

14. (New) The method as claimed in claim 11, wherein the network is a packet-switched network.

15. (New) The method as claimed in claim 14, wherein the packet is sent from the source node to the destination node using destination routing.